TOOL N°2

HR PACK – PROGRAM DATA MANAGEMENT FOR HUMANITARIAN AID AND INTERNATIONAL DEVELOPMENT CSOs

THE PROFESSIONAL FRAME OF REFERENCE PUT INTO PRACTICE: A DETAILED OVERVIEW OF PROGRAM DATA MANAGEMENT SKILLS TO HELP FRAME YOUR HR NEEDS

cartong

MARCH 2021

CARTONG

Created in 2006, CartONG is a French H2H/support NGO specialized in Information Management. Our goal is to put data at the service of humanitarian, development and social action projects. We are dedicated to improving the quality and accountability of field activities, in particular through better needs assessments and monitoring and evaluation. We act as a multidisciplinary resources and expertise centre, accompanying our partners' strategies and operations. Our staff and volunteers also support the community as a whole by producing documentation, building capacities and raising awareness on the technical, strategic and ethical challenges of digital technologies.

ACKNOWLEDGMENT

This publication is supported by the French Development Agency (AFD). Nevertheless, the ideas and opinions presented in this document do not necessarily represent those of the AFD.

TABLE OF CONTENTS

1. SKILLS SHEETS, TO WHAT END?

These sheets, organised by skill blocks in program data management, were designed to meet the needs of CSOs coping with the challenges raised by the necessity to structure program data management skills within a mission or organisation.

Amongst other things, said sheets allow the CSOs to:

- Align each skill within a broader set and detail their common goals.
- Get a better grasp of what each skill covers, to ensure understanding of the different types of competences (technical and methodological).
- Understand in what context these skills are useful and why.
- Highlight the factors that need to be considered when it comes to recruiting one or several of the listed skills.

1.1. WHY NOT CREATE SHEETS BY "OCCUPATION"?

Today, data management skills are divided among a number of different occupations and posts, themselves non-standardised in the industry between different areas of intervention and organisation size. These skills can hence be part of several different "occupations."

Each skill can more easily be integrated into various organisational practices.

1.2. WHO CAN USE THESE SHEETS? WHEN?

These sheets can be used both by **HQ** and **the field**, whether by **people involved in program data management** or by **the Human Resources department**, should the latter wish to understand how these skills are structured.

Among other things, these sheets may prove particularly useful for:

- Strategic conversations on the structuring of program data management skills within an organisation.
- Drafting a job description, for the assessment of needs and the activities and skills description.
- Recruitment (test design, questions during interviews, support for communications with HR).

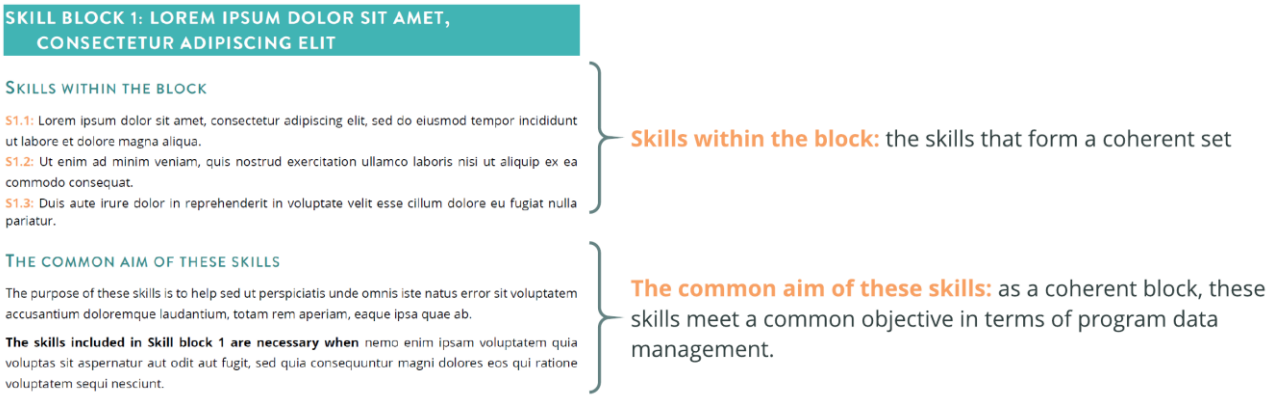
These sheets are particularly useful when used in conjunction with other documents of the HR pack:

- The professional frame of reference: which skills are needed in program data management? (document outlining the skill blocks and their associated activities).
- Structuring program data management responsibilities within your organization: 5 "typical case" scenarios

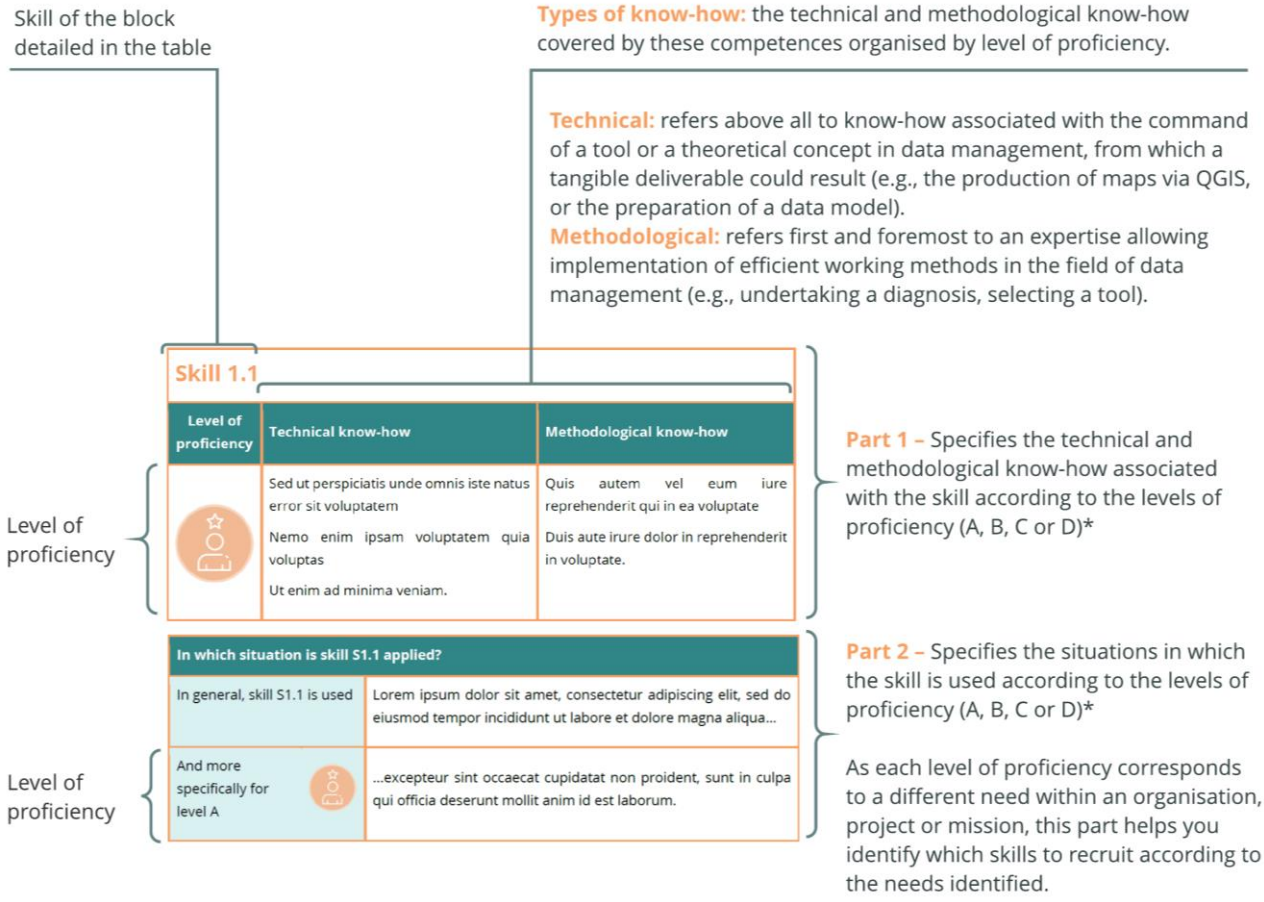
2. HOW TO READ THESE SHEETS?

2.1. PRESENTATION OF A SHEET

Each skill block is composed of **four sub-sections**. The first **two sub-sections constitute the introduction** and present:

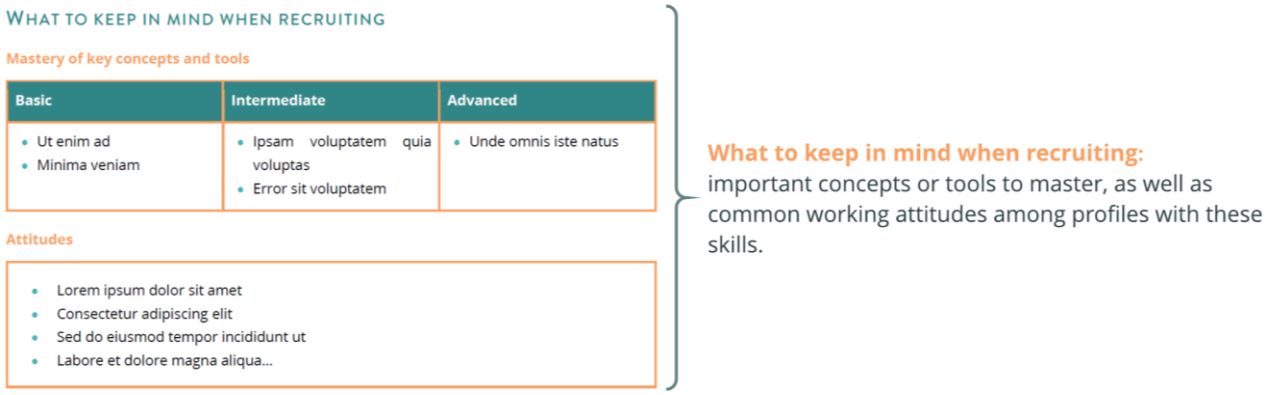


The third sub-section is composed of a series of tables detailing each skill. Each table includes:



** When a level of proficiency is not detailed for one of the skills, it simply means that it is not applicable, and/or that the technical and methodological know-how necessary to predicate of the said skill exist at other levels of proficiency.*

The fourth and final sub-section of each skill block covers recruitment aspects:



2.2. PRESENTATION OF THE LEVELS OF PROFICIENCY

Each level of proficiency corresponds to a different need within an organisation, a project or a mission.

	**Level A:** Corresponds to a **basic level of proficiency, related exclusively to the execution of a task**. It involves understanding basic concepts, mastering and using simple tools, and applying clear instructions.
	**Level B:** Corresponds to both an **intermediate level of proficiency in execution skills**, and to a **level of information management activities coordination**. An employee at this level should be able to apply complex guidelines, use less standardized tools, analyse situations and propose creative and adapted solutions.
	**Level C:** Corresponds to a **level of strategic program data management skills**. An employee at this level should be able to assess needs and develop implementation strategies and methods, and guide program teams.
	**Level D:** Corresponds to an **advanced, expert level, related exclusively to execution**, with a capacity to fulfil all associated technical and strategic requests. An expert in one skill or set of skills does not necessarily have a large spectrum of other skills. He/she will be specialised in a specific field such as statistical analysis or geographic information systems.

3. PRELIMINARY INFORMATION

3.1. MANAGING A DEPARTMENT

One of the skill sets mapped in the document *The professional frame of reference: which skills are needed in program data management?* is not included in this document, namely **set 6**, "Ensure the management of a department and its resources". Given that the latter is not specific to the program data management sector, it did not seem relevant to detail its contents.

3.2. TRAINING AND EXPERIENCE

Initial training of profiles to be recruited is generally not very formative given the small number of courses available in the humanitarian sector with a strong focus on data management. As such, if certain courses or university degrees may be interesting in relation to the more technical aspects of data management, the following indicate as well that the person will have transferable skills that are important to achieve a solid methodological background (and develop a strategic vision):

- Project Management
- Social Sciences
- Economy
- Geography
- Mathematics / Statistics
- IT

The same is true of previous experience since the same job title can cover very different realities in terms of skills and tasks performed. It thus seems more relevant, for each competency, to look at the journey in terms of skills acquired rather than in terms of positions held. That being said, some experiences are relevant to look for in a generic way, depending on the skill levels sought:

- For more strategic level B or C skills, profiles such as MEAL (Monitoring, Evaluation, Accountability and Learning) coordinator, program coordinator or technical coordinator (with a program data management component) may be of interest, as well as program data management services coordinators or managers.
- For Level A or Level B execution skills, profiles such as M&E managers, database managers, program data management managers can be appealing.
- For C or D level execution skills, assuredly technical profiles are preferable, with a great deal of experience in the skill or skills sought.

4. SKILL BLOCK 1: DESIGN AND IMPLEMENT A DATA MANAGEMENT STRATEGY

4.1. SKILLS WITHIN THE BLOCK

S1.1: Assess the data management needs of a project or organisation and identify methodologies and technical solutions to address them.
S1.2: Define and implement technical, methodological standards and associated procedures in accordance with the organisation's and the sector's best practices and standards.
S1.3: Develop and influence internal and external data management practices and strategies.

4.2. THE COMMON AIM OF THESE SKILLS

The purpose of these skills is to help **define the strategy of a mission or organisation**, whilst keeping in line with a **broader data management ecosystem**. They also ensure the possibility of implementing and updating said strategy, through **the use of harmonised/coherent technical tools and standard, tried-and-tested procedures**.

The skills forming Skill block n°1 are necessary when the data management strategy at project, mission or organisation level is lacking (whether non-existent or incomplete), and the data management needs require that this strategy be accomplished or improved, and that standard data management practices be defined. This may also concern the entire sector's strategy, which would require changing practices externally.

4.3. ASSOCIATED KNOW-HOW AND THEIR APPLICATION

S1.1: ASSESS THE DATA MANAGEMENT NEEDS OF A PROJECT OR ORGANISATION AND IDENTIFY METHODOLOGIES AND TECHNICAL SOLUTIONS TO ADDRESS THEM

Skill 1.1

Level of proficiency	Technical know-how	Methodological know-how
	Break down the different data collection and processing needs during the project cycle (e.g., needs assessment, case management, M&E, CRM, etc.) • Identify metrics that may cause data management complications (e.g., multiple data sources, case management, etc.) so that they may be taken into account. Translate the program's [and M&E] data management needs into technical data management principles. Examples: • Understanding that medical patient follow-up involves a particular practice and data model adapted to case management, • Avoiding double-counting involves assigning a unique number/code to each beneficiary, • Combining data from different programs involves ensuring data interoperability. Use data flow models to coordinate data management activities (e.g., databases update, data transfer, etc.).	Map the data management cycle and adapt it to the needs of the program [and M&E]. Identify the comparative advantages of various technical solutions and methods for all stages of data management (ex: MDC, DBMS, Analysis). Confront needs with a comparative analysis, making it possible to choose technical and methodological solutions adapted to projects. Justify technical scenarios for one or several projects. Plan and implement the deployment of a tool (collection, management and analysis) or of a working method covering technical, HR and financial aspects.
	Choose and represent graphical data models and flows adapted to the needs of the structure, allowing joins (relationships) and analysis queries. • Knowledge of typical and standard industry models (e.g., flakes, HXL), • Identify and locate data (tangible vs. IT),	Perform a data management diagnosis on a mission that includes needs, opportunities and constraints, practice analysis (context-specific or non-context-sensitive), comparison of different tools, proposal for recommendations, cost estimate.

	• Graphically display data. Design data management processes based on the data models chosen.	Develop the data management strategy for a mission or organisation, involving identification of the following: • Standard technical solutions, • Interoperability needs, • Workflow and segregation of duties, • Human resources (recruitment, training), • Budget.

In which situation is skill S1.1 applied?	
In general, skill S1.1 is used	From the moment it is necessary to ensure that the collected data and techniques used are in line with a project or an organisation's goals…
And more specifically for level B 	…and when it is necessary to provide support to the program teams in assessing their data management needs, in order to choose suitable technical solutions.
And more specifically for level C 	…and when it is necessary to choose data management tools and methods, to guide and harmonise a mission or organisation's strategy, on the basis of the most advanced practices within the sector.

S1.2: DEFINE AND IMPLEMENT TECHNICAL, METHODOLOGICAL STANDARDS AND ASSOCIATED PROCEDURES IN ACCORDANCE WITH THE ORGANISATION'S AND THE SECTOR'S BEST PRACTICES AND STANDARDS

Skill 1.2

Level of proficiency	Technical know-how	Methodological know-how
	Have knowledge about and be capable of using the technical tools chosen by the organisation. Be familiar with and enforce data management best practices and standards at each stage of the project cycle, for instance: • Unique identifiers, • Metadata usage, • Single-entry database usage. Develop and organise harmonised data management models across multiple zones. • Interoperable forms and collection tools, • Similar database models.	Adapt and implement procedures for collecting, transferring, managing, analysing and storing data (data management cycle). Example: Standard Operating Procedures (SOPs) well suited to an area, or project. Adapt methods and tools to the opportunities and challenges encountered (context). Ensure proper dissemination of information on practices and tools used or projected to be used. Ensure consistency of data management tools and methods at the different levels and programs of an organisation/mission (e.g., coordination between branches). Carry out activities fostering the exchange of best practices between the various projects. Provide feedback on methods and tools.
	N/A	Be familiar with the data management ecosystem within the organisation and among external stakeholders, so as to adapt to it (*depending on the sector or area of intervention, e.g., knowledge of the health data management ecosystem*). Ensure integration and application of the organisation's general policies in data management procedures (technical and methodological).

		Develop consistent general standards and procedures for all stages of the data management cycle: collection, transfer, management, analysis, storage. Link data management policies and procedures with related policies and procedures: IT infrastructure, legal, MEAL, HR, risks.

In which situation is skill S1.2 applied?	
In general, skill S1.2 is used	From the moment data is collected at organisation-wide level and that there is a desire to ensure standard data quality…
And more specifically for level B 	…and when it is necessary to coordinate several projects and/or bases to ensure that their project management approach is comparable to ensure data interoperability.
And more specifically for level C 	…and when it is necessary to make these choices, not just based on needs, but also in connection with a broader organisational strategy, and to take into account more complex and plentiful models and data flows.

S1.3: DEVELOP AND INFLUENCE INTERNAL AND EXTERNAL DATA MANAGEMENT PRACTICES AND STRATEGIES

Skill 1.3

Level of proficiency	Technical know-how	Methodological know-how
	N/A	Host a community of practice (e.g., create or become part of an IM cluster). Have a cross-sectoral vision of data management tools and best practices in the industry. Assess the data management ecosystem within Humanitarian Aid and International Development CSOs, its sector or its area of intervention. Identify the strengths and weaknesses of other data management actors. Influence CSOs and donors' practices on data management issues via production of sector-structuring documents. Argue and adapt the discourse on data management to different audiences (internal, external, technical, non-technical). Coordinate and exchange on data management practices related to specific areas or themes with other stakeholders in the sector.

In which situation is skill S1.3 applied?	
In general, skill S1.3 is used	From the moment an organisation wants to position itself as a major player in the field of data management…
And more specifically for level C 	…and when it is necessary to influence the practices and strategies of its actors, sector/area of intervention, in order to improve coordination between organisations and/or encourage best practices.

4.4. WHAT TO KEEP IN MIND WHEN RECRUITING

Mastery of key concepts and tools

Basic	Intermediate	Advanced
• Metadata • Data quality • Data aggregation • Data management cycle • Interoperability	• Data models • Data integrity • Relationship models • Case management	• Data management ecosystem

Attitudes

- Overall vision, strategic thinking
- Ability to structure and create schematic models (data models)
- Ability to manage and work with a diverse group of people whose technical specialisation, background and level of expertise are heterogeneous
- Ability to express oneself and to argue ideas in an effort to convince

5. SKILL BLOCK 2: ORGANISE AND IMPLEMENT DATA COLLECTION AND STRUCTURATION ACTIVITIES

5.1. SKILLS WITHIN THE BLOCK

S2.1: Design, organise and administer databases according to industry best technical practices (via one or several IT tools).

S2.2: Support data collection processes by contributing to their coordination and the development of their protocols whilst ensuring the establishment of suitable data collection forms (via one or several IT tools).

5.2. THE COMMON AIM OF THESE SKILLS

All of these skills are designed to help program [and M&E] teams **obtain relevant, reliable, and structured data sets** from **organised and efficient collections** and managed in **appropriate databases**.

The skills forming Skill block n°2 are needed when program [and M&E] teams need support to conduct surveys and ensure that the collected data can then be properly exploited. This can be applied on an ad hoc basis, to the conduct of a specific survey, or it can be part of an ongoing process, where the collected data feeds into analysis and representation tools on an ongoing basis.

5.3. ASSOCIATED KNOW-HOW AND THEIR APPLICATION

S2.1: DESIGN, ORGANISE AND ADMINISTER DATABASES ACCORDING TO INDUSTRY BEST TECHNICAL PRACTICES (VIA ONE OR SEVERAL IT TOOLS)

Skill 2.1

Level of proficiency	Technical know-how	Methodological know-how
	Be familiar with the various data formats (e.g., digital, text, single or multiple choice, date). Enter data and perform operations on an existing database (e.g., calculation, cleansing, filters, sorting, organisation and formatting, checking for double entries). Design databases: • In Excel, • With "1 to 1" relationships between tables or data sources. Design and harmonise simple data models, using practices such as nomenclature, categorisation, setting standards. Examples: • PCODE (attributed of a unique code to a geographical area), • Age group, • Calculation of indicators in which a plurality of data is grouped, • Having knowledge of the import-export formats of the technical solutions used, such as: .xlsx, .csv, .dta, etc. Import data into an existing database.	N/A
	Design and harmonise complex data models (e.g., database coordination, relationship management). Configure data collection fields (age, gender).	Translate the program's [and M&E] analysis needs into effective databases: • Understand program constraints and expectations,

	Translate a data model in a database management software. Ensure data interoperability between different data sources (e.g., asynchronous, non-automatic, manual import). Master platform / interface of mobile data collection applications management including: • Access rights management, • Role management.	• Understand the rules and opportunities that the IT department can bring and adapt the collection tools accordingly (ask the IT department the right questions).
	N/A	Decide the data management strategy: • Choice and combination of tools, • Data management best practices, • Workflow, • Choice and representation of data models. Coordinate data management modalities and related services (M&E, IT, Programs).
	Design databases: • On a variety of tools (including SQL-based), • With "1 to many" relationships, • Enabling case management. Set up data management tools (AidImpact, ActivityInfo): configure indicators, databases. Be familiar with the features provided by the various IM and IT solutions (e.g., cloud, authentication system). Design automatic interfaces between databases and various collection, management or analysis tools (e.g., cloud). Ensure real-time data interoperability with APIs (e.g., API query).	N/A

In which situation is skill S2.1 applied?	
In general, skill S2.1 is used	From the moment a team plans to collect data, it is necessary to organise and prepare for the arrival of this data…
And more specifically for level A 	…and when it is necessary to create and manage simple databases, allowing for processing and analysis of data collected in ad hoc surveys.
And more specifically for level B 	… and when it is necessary to create and manage complex databases, allowing for processing and joint analysis of data collected via several linked surveys (e.g., follow-up over time, data collected under different formats).
And more specifically for level C 	…and when it comes to setting up a standard and harmonised system to process collected data, establish a common mission-wide strategy (e.g., selection of tools, adoption of good practices).
And more specifically for level D 	…and that the collected data is mainly geared towards case management, or the "instant" reuse of said data by the program teams. …and that the organisation uses an advanced platform with centralised management to manage this data.

S2.2: SUPPORT DATA COLLECTION PROCESSES BY CONTRIBUTING TO THEIR COORDINATION AND THE DEVELOPMENT OF THEIR PROTOCOLS WHILST ENSURING THE ESTABLISHMENT OF SUITABLE DATA COLLECTION FORMS (VIA ONE OR SEVERAL IT TOOLS)

Skill 2.2

Level of proficiency	Technical know-how	Methodological know-how
	Design input masks or create forms via a form-builder. Master one or several MDC tools (e.g., ODK, KoBoToolbox): configure tools for data collection. Support data collection teams with troubleshooting bugs. Integrate secondary data, import data into an existing database.	Be familiar with the broad principles of MDC and know how to identify situations in which these tools are appropriate. Have knowledge of the steps required prior to any mobile data collection (such as the need to test the questionnaire: test protocol and validation). Train enumerators and data-monitoring personnel and adapt to the various levels encountered.
	Create forms using XLS Forms encoding. Master multiple MDC tools (ex: KoBo, ODK, ONA, Survey CTO, Survey 123). Carry out an analysis plan: • Define the variables to measure the desired metrics and indicators, • Plan descriptive analysis, general trends of the entire population, variable-crossing, statistical calculations. Organise activity tracking collections (case management), requiring a particular protocol. Master platforms / interfaces of mobile data collection applications management including: • Access rights management, • Role management, • Survey form update following a change, • Implementation of preliminary interest analysis.	Be familiar with the data ecosystem in its environment (sector, area), to retrieve secondary data. Support program [and M&E] teams in producing an analysis plan prior to quantitative data collection. Draft protocols for specific data collections (e.g., survey protocol). Confront needs with a comparative analysis, making it possible to choose suitable technical and methodological solutions. Perform comparisons of technical solutions, technical scenarios, and tool deployment experience. Based on limited information. Coordinate the human and financial resources required for collection.

	N/A	Coordinate standardised data collections in separate areas. Ensure consistency of collected data, via: • Implementation of standard protocols, • Quality and compliance monitoring of the collected data. Define resource mobilisation strategies for data collection.
	Master advanced questionnaire functions related to case management. Master the use of comprehensive and/or industry data management platforms (from collection to analysis). Examples: Akvo Flow, AidImpact, Dharma.	N/A

In which situation is skill S2.2 applied?	
In general, skill S2.2 is used	From the moment a data collection via one or several digital tools is organised…
And more specifically for level A 	…and upon the launch of one or several localised and ad hoc surveys in a particular area. The data to collect is simple and small.
And more specifically for level B 	…and when more complex and frequent surveys are launched (e.g., follow-up of the same information at several time points, requiring access to previously collected data, cross-referencing of several different surveys, same survey in different areas).
And more specifically for level C 	…and when it comes to establishing a standardised and harmonised data collection system at mission or organisation level, or when the area of intervention is sensitive and requires increased control of the reliability of the data (e.g., health).
And more specifically for level D 	…and when the organisation has to use an industry-specific data collection platform or one that is very advanced in its modalities. …and when it is necessary to create questionnaires requiring dedicated case management functions.

5.4. WHAT TO KEEP IN MIND WHEN RECRUITING

Mastery of key concepts and tools

	Basic	Intermediate	Advanced
Datasets preparation and structuring	• Excel (basic)	• Excel (advanced) (PowerQuery) • Google sheet • Excel online	• Access, MYSQL, PostGreSQL • Control of programming languages associated with database management systems (SQL, VBA…)
Data collection	• Simple tools of the ODK environment (KoBo Toolbox…) • Or other simple mobile collection tools used in the humanitarian sector	• Case tracking, data encryption, or quality control functions • SurveyCTO • XLS Form format for coding surveys	• Dedicated industry tools

Attitudes

- Ability to adapt to different management tools and systems
- Capacity for planning and monitoring
- Attention to detail
- Orientation towards quality control

6. SKILL BLOCK 3: ORGANISE AND IMPLEMENT DATA ANALYSIS, VISUALISATION AND DISSEMINATION ACTIVITIES

6.1. SKILLS WITHIN THE BLOCK

S3.1: Ensure the production of graphical visualisations and preliminary analyses (via various IT tools) of quantitative data adapted to the needs of the teams according to industry standards.

S3.2: Ensure the production of preliminary analyses and visualisations of qualitative data adapted to the needs of the teams according to industry standards.

S3.3: Ensure the production of spatial representations and analyses through the establishment and use of a geographic information system.

S3.4: Provide support to other departments in their data analysis, usage and dissemination processes.

6.2. THE COMMON AIM OF THESE SKILLS

All of these skills are designed to provide the program [and M&E] with products **for analysing, visualising and disseminating** data **consistent with and adapted to their needs**, to help them understand the analysis, so that they may provide **a basis upon which to make operational decisions**.

The skills forming Skill block n°3 are necessary when the program [and M&E] teams need support to perform data analysis, graphical or cartographic representations in order to make operational decisions informed by the collected data. This can be applied on an ad hoc basis, to the conduct of a specific survey, or it can be part of an ongoing process, where the collected data feeds into analysis and representation tools on an ongoing basis.

6.3. ASSOCIATED KNOW-HOW AND THEIR APPLICATION

S3.1: ENSURE THE PRODUCTION OF GRAPHICAL VISUALISATIONS AND PRELIMINARY ANALYSES (VIA VARIOUS IT TOOLS) OF QUANTITATIVE DATA ADAPTED TO THE NEEDS OF THE TEAMS ACCORDING TO INDUSTRY STANDARDS

Skill 3.1

Level of proficiency	Technical know-how	Methodological know-how
	Perform simple calculations on Excel (averages, sums...). Make simple representations and graphs on Excel.	Be familiar with statistical analysis and graphical representation issues (e.g., data types, aggregation of data, choice of graphical representation according to available data). Apply an analysis plan.
	Perform complex calculations from formulas on Excel (e.g.: SUM.SI.ENS). Perform "advanced" analyses and graphical representations on Excel (using dedicated features such as pivot tables, dynamic graphs, segments). Aggregate data from multiple formats (xls, csv, json, etc.) and sources (using tools such as Access, Excel). Apply the following statistical concepts: workforce, average, median, frequency, standard deviation.	Support the program [and M&E] in producing an analysis plan if this has not carried out prior to quantitative data collection. Interpret the needs of the program [and M&E] in terms of statistical analysis and data representation.
	N/A	Be familiar with the comparative advantages of several data visualisation tools (in terms of technical possibility, durability and organisational compatibility, prerequisite skills, etc.), in order to make a choice. Question the most relevant modes of analysis, visualisation and representation, based on the needs and means of an organisation.

	Develop static and dynamic dashboards using visualisation tools (such as Power BI, Table, Qlik sense, Zoho Analytics), and in particular, create visuals from multiple linked tables (relational tables). Master statistical tools (e.g., Stata, R).	N/A

In which situation is skill S3.1 applied?	
In general, skill S3.1 is used	From the moment quantitative data is collected within the framework of a survey or for monitoring projects, and such data needs to be analysed to provide support for decision-making…
And more specifically for level A 	…and when it is necessary to analyse this quantitative data on a project, in a single area, for monitoring and decision-making, and there is no need to centralise or harmonise the data.
And more specifically for level B 	…and when it is necessary to harmonise and centralise the data collected in the framework of several projects or across several areas for common analysis.
And more specifically for level C 	…and when the organisation wishes to direct which best practices and tools should be used for data visualisation, so that they may match the needs and resources available in a mission.
And more specifically for level D 	…and when the analysis tool must be shared and updated simultaneously with several internal or external actors, for different purposes (monitoring, reporting, communication). → Can be easily contracted out

S3.2: ENSURE THE PRODUCTION OF PRELIMINARY ANALYSES AND VISUALISATIONS OF QUALITATIVE DATA ADAPTED TO THE NEEDS OF THE TEAMS ACCORDING TO INDUSTRY STANDARDS

Skill 3.2

Level of proficiency	Technical know-how	Methodological know-how
	Apply the different stages of qualitative data analysis (such as transcription, coding, comparison of key topics, synthesis and extraction of relevant verbatim reports). Transcribe, summarise, and categorise elements from qualitative data collections. Know how to code manually and produce a synthesis with the onset of a "profiling" analysis.	Be familiar with issues related to qualitative data analysis (such as objectives, limitations).
	N/A	Support program [and M&E] teams in producing an analysis plan prior to quality data collection. Interpret the needs of the program [and M&E] teams in terms of qualitative data analysis and representation. Know how to analyse the coding outcome by highlighting complex trends and typical profiles.
	Use qualitative data analysis software (such as coding or lexicometrics software). Use transcription software.	N/A

In which situation is skill S3.2 applied?	
In general, skill S3.2 is used	From the moment qualitative data is collected within the framework of a survey or for monitoring projects, and such data needs to be analysed to provide support for decision…
And more specifically for level B 	…and when these qualitative surveys such as Focus Group Discussions, open observations or interviews are carried out in limited numbers and draw a simple analysis from them.
And more specifically for level C 	…and when it is necessary to support the program in choosing qualitative analysis methods.
And more specifically for level D 	…and when vast amounts of “discursive” qualitative data are collected and require quantitative analysis.

S3.3: ENSURE THE PRODUCTION OF SPATIAL REPRESENTATIONS AND ANALYSES THROUGH THE ESTABLISHMENT AND USE OF A GEOGRAPHIC INFORMATION SYSTEM

Skill 3.3

Level of proficiency	Technical know-how	Methodological know-how
	Manipulate a mobile device to collect geographical data (GPS / smartphone…) and exploit data collected by these means. Use basic graphical representation modes (point, polygon, line, etc.). Produce simple maps on tools such as Google Earth or uMAP.	Understand basic geographical concepts such as GPS format, latitude/longitude, administrative data or geographically transposable addresses.
	Structure associated geographic and attribute data with the aim of producing maps. Import data into QGIS or ArcGIS (e.g., vector and raster layers, transform GPS data…), with data cleaning capability, and occasionally some simple spatial processing (e.g., Cross-referencing data, buffer zones…). Produce simple maps using tools such as QGIS or ArcGIS. Implement and technically support a simple GIS project using tools such as QGIS or ArcGIS.	Be familiar with and know how to apply the rules of graphical semiology (visual variables types and appropriate modes of representation) and geographical concepts (geodesy, projection, metadata…). Be familiar with all of the components of a map (e.g., title, legend, source, North arrow, scale, disclaimers…) as well as all of the types of maps (e.g., basemap, thematic…). Be familiar with best practices for structuring geographic data sets to ensure consistency.
	N/A	Coordinate the implementation of a comprehensive mission-wide geographic information system.

	Produce advanced maps (e.g., significant number of layers, complex representation modes). Connect the GIS to external databases and transform data. Frequently perform advanced GIS processing (e.g., satellite image processing, raster data, etc.) and mass processing on the data. Implement and maintain a complex GIS (multi-layered, geographic and project) offline. Implement and maintain a dynamic online mapping platform.	N/A

In which situation is skill S3.3 applied?	
In general, skill S3.3 is used	As soon as geographical data is available (GPS, place names) and a cartographic representation is desired…
And more specifically for level A 	…and which is in line with most of the needs required by more traditional projects having a geographical dimension and wishing to materialise it from time to time on a simple map.
And more specifically for level B 	…and when it is necessary to regularly produce (more than once a month) simple static maps potentially based on limited spatial treatments.
And more specifically for level C 	…and when it is necessary to evaluate, harmonise data and guide the choice of GIS tools on a mission.
And more specifically for level D 	…and when the geographical component is at the heart of the project/program (e.g., urban project, population movement analysis, natural hazards, mine clearance, etc.). → Easily contracted out

S3.4: PROVIDE SUPPORT TO OTHER DEPARTMENTS IN THEIR DATA ANALYSIS, USAGE AND DISSEMINATION PROCESSES

Skill 3.4

Level of proficiency	Technical know-how	Methodological know-how
	Produce communication materials. Create simple computer graphics from the data.	Ensure and guide the use of data and analysis (e.g., ability to stand back vis-à-vis data use, coordination with program teams, put collection and analysis needs / macro vision into perspective). Provide a framework (statistical limits, biases identified) for the interpretations made following data analysis.
	N/A	Guide best communication practices (identify target audience, simplify data). Decide which external communication media to produce. Produce coherent and harmonised data analysis and usage systems, meeting the needs of the program [and M&E].
	Produce illustrations gathered from data analysis using dedicated software such as Scribus or Illustrator.	N/A

In which situation is skill S3.4 applied?	
In general, skill S3.4 is used	When other departments have trouble analysing and communicating the collected data…
And more specifically for level B 	…and when it is necessary to communicate internally with simple visual analysis.

And more specifically for level C 	...and when it is necessary to communicate data and analyses externally.
And more specifically for level D 	...and only when it is necessary to produce external communication media in a frequent and recurring manner.

6.4. WHAT TO KEEP IN MIND WHEN RECRUITING

Mastery of key concepts and tools

	Basic	Intermediate	Advanced
Quantitative analysis	• Excel (basic)	• Excel (advanced)	• Business intelligence tools: Power BI, Table, Qlik...
Qualitative analysis	N/A	N/A	• Lexicometrics software: Nvivo, Maxda, Atlas Lexico 5, etc.
Mapping	• Google Earth	• Umap/OSM	• QGIS / ArcGIS
Communication	N/A	• Scribus/Publisher • InkScape	• InDesign • Illustrator

Attitudes

- Creativity
- Ability to easily convey complex ideas
- Prioritisation of needs
- Ability to self-train on tools
- Welcomes feedback and criticism in a favourable light
- Ability to work with short deadlines
- Pragmatism: to be able to meet specific needs in a given context

7. SKILL BLOCK 4: ORGANISE AND IMPLEMENT PROCESSES ENSURING DATA QUALITY

7.1. SKILLS WITHIN THE BLOCK

S4.1: Implement devices that ensure the availability, reliability, traceability and quality of data, to contribute to the quality of programs.

S4.2: Implement change management that is focused on a data culture tailored to the needs of the organisation/project.

7.2. THE COMMON AIM OF THESE SKILLS

All of these skills are designed to ensure **that the data collected** is **relevant to the program's objectives; that it is reliable, traceable and of good quality**, by direct intervention on said data or via team capacity-building.

The skills forming Skill block n°4 are required when the program [and M&E] teams collect data, either on an ad hoc or continuous basis. The larger the volume of collected data, the more crucial the skills required to ensure data quality will be, and the more important it will be to instill a data culture within the organisation.

7.3. ASSOCIATED KNOW-HOW AND THEIR APPLICATION

S4.1: IMPLEMENT MEASURES THAT ENSURE THE AVAILABILITY, RELIABILITY, TRACEABILITY AND QUALITY OF DATA, TO CONTRIBUTE TO THE QUALITY OF PROGRAMS

Skill 4.1

Level of proficiency	Technical know-how	Methodological know-how
	Master the data management cycle and apply it to data preparation and cleaning practices. Prepare for data collection: consistent naming (e.g., PCODE), attention to data types and attributes. Clean up duplicate and inconsistent data. Check the collected data: spot check, calculation, meaning.	Be aware of the issues involved in collecting certain program-specific information.
	Implement workflows in a team ensuring traceability, reliability, consistency and quality: • Use of metadata and monitoring of the data collection, • Data validation, • Triangulation of data with other sources, • Editing and deletion rules, • Refreshing data and backups of previous copies. Ensure data availability: storage of single-entry table data (allowing for efficient analysis queries such as pivot tables).	Get involved in setting the goals for an M&E plan and challenge the program teams. Interpret M&E needs, in collection, management and analysis methods. Coordinate quality control methods on a mission-wide basis. Ensure a consistent level of data and analysis quality. Support program teams in defining standards for the calculation of their indicators (e.g., counting beneficiaries or results).
	N/A	Evaluate data collection, management, and analysis methods against data quality objectives.

		Assess data quality, reliability, traceability and availability and identify gaps (e.g., data quality method audit, of the USAID DQA type for instance). Contribute to the data management aspects of the M&E strategy, the strategy for collecting, managing and analysing data across multiple projects. Recommend best practices in terms of data management. Integrate data management principles into an M&E strategy. Assess M&E feasibility from a data management, tool management interoperability, aggregation, data integrity perspective.

In which situation is skill S4.1 applied?	
In general, skill S4.1 is used	From the moment data is collected…
And more specifically for level A 	…and when the collected data comes from unique sources (e.g., a survey), and/or said data is limited in quantity.
And more specifically for level B 	…and when data originates from multiple sources, and an important structure prior to collection is crucial to ensure data quality and traceability. This is particularly the case when the same data is collected longitudinally, for the monitoring of indicators or case follow-up. Or when the Monitoring & Evaluation plan involves indicators that are complicated to measure (aggregation, specific methodology).
And more specifically for level C 	…and when an organisation wants to implement a strategy and standards in terms of data traceability, reliability and quality.

S4.2: IMPLEMENT CHANGE MANAGEMENT THAT IS FOCUSED ON A DATA CULTURE TAILORED TO THE NEEDS OF THE ORGANISATION/PROJECT

Skill 4.2

Level of proficiency	Technical know-how	Methodological know-how
	Synthesise qualitative and quantitative data for the program teams. Build and understanding of data and develop skills their analysis, with a view to decision-making: • Understand what is included in a data set, • To which questions data may help provide an answer, • Understand the data (types, attributes, data vs. information), • Know how to analyse the data (causation vs. correlation), • Understand data aggregation. Train in best practices at all stages of the data cycle: collection, cleaning, analysis, for instance: • Sampling, data aggregation, • Data cleaning, • Use of suitable visuals (map, type of chart, representation for qualitative analysis). Initiate reflection around data quality, management, and analysis objectives: • Understanding of the origin and reliability of the data, • Collection methods, • Data protection.	Adapt training to one's public and spark interest within the organisation (pedagogy and popularisation). Guide program teams in their understanding of the quantitative, qualitative and cartographic analysis produced. Assess the teams' levels and needs. Guide data management teams in their data collection, management and analysis practices. Enforce data management best practices across departments.
	N/A	Assess data quality and identify gaps. Guide the teams in charge of the data management strategy in their data collection, management and analysis practices.

		Develop and steer an action plan for improving data management within an organisation. Define data management best practices across departments. Foster change management within an organisation.

In which situation is skill S4.2 applied?	
In general, skill S4.2 is used	From the moment an organisation wants to disseminate data management and usage best practices. Very useful when data management tasks are scattered across multiple positions…
And more specifically for level B 	…and when an organisation wishes to develop, for its program teams, a minimal understanding of the concepts around data usage and analysis, so that they may take more informed operational decisions.
And more specifically for level C 	…and when an organisation wants to develop a thorough understanding of the data with the people performing the collection, management and analysis to optimise their technical skills.

7.4. WHAT TO KEEP IN MIND WHEN RECRUITING

Mastery of key concepts and tools

	Basic	Intermediate	Advanced
Quality system	• Unique identification code (e.g.: PCODE, beneficiary codes)	• Consistency, validity, triangulation, completeness and timeliness of data • Data cleansing	N/A
Data culture	N/A	• Data vs. Information • Cause vs. Correlation • Data type and attributes • Data aggregation type (sum, mode, average, median, number, min., max.) • Visualisation type and their correct use (e.g., circular chart, linear chart, histogram) • Sample and confidence interval • Standard deviation	• Data culture concept (reading, working, analysing and conversing with data) • Collection method • Data protection • Models and data flows

Attitudes

- Attention to detail
- Data culture / Data literacy
- Collection and dissemination of useful information
- Awareness of cross-functional issues in data management (capacity for coordination, systems/organisations analysis, communication, etc.)

8. SKILL BLOCK 5: ORGANISE AND IMPLEMENT APPROACHES ENSURING RESPONSIBLE DATA MANAGEMENT

8.1. SKILLS WITHIN THE BLOCK

S5.1: Be familiar with and implement data protection procedures and practices that ensure compliance with national and international law.

S5.2: Be familiar with and apply the ethical principles of responsible data management taking into account industry best practices and contextual specificities.

S5.3: Define and implement data security best practices.

8.2. THE COMMON AIM OF THESE SKILLS

All of these skills are designed to ensure **responsible data management** through the implementation of **good practices, compliance with standards, principles** in force in the humanitarian and international development sector and respect for the **national and international legal framework** on personal data.

The skills forming Skill block n°5 are required when the program [and M&E] teams collect any conceivable item of data on vulnerable populations. Such skills are required to determine whether the collected data is personal and/or sensitive so that measures can be implemented to ensure ethical data management, including appropriate data security and compliance with legal, industry-standard frameworks. However, depending on the context, these skills can be divided between people who are not directly connected to program data such as DPO posts, local DPO relay, field coordinators, IT, etc.

8.3. ASSOCIATED KNOW-HOW AND THEIR APPLICATION

S5.1: BE FAMILIAR WITH AND IMPLEMENT DATA PROTECTION PROCEDURES AND PRACTICES THAT ENSURE COMPLIANCE WITH NATIONAL AND INTERNATIONAL LAW

Skill 5.1

Level of proficiency	Technical know-how	Methodological know-how
	Distinguish personal from sensitive data. Execute clear instructions for data protection (configuration of tools, obtaining consent, execution of archive protocols, or de-identification, anonymisation, pseudonymisation, aggregation, etc.).	N/A
	Be familiar with and enforce the key elements of international data protection regulations (GDPR, etc.). Be familiar with and enforce the key elements of the data protection regulation of the country or countries of intervention, such as the principles of processing limitation, limited conservation, proportionality, the rights of the data subject, etc. Implement data protection measures, from the time of default data design and protection, for instance via the choice and configuration of data management tools, the design of collection forms, etc.	Briefly analyse legislation. Design and implement awareness-raising and training actions. Identify action points to improve program data protection. Adapt the recommended measures to the intervention contexts. Establish practices, procedures and methodologies allowing the implementation of key data protection principles, for example: • Choice of a legal basis, • Obtainment of informed consent, • Choice of a retention period, • Implementation of archiving protocols, de-identification, anonymisation, pseudonymisation, aggregation, etc.

	Have specific knowledge of the international and national data protection legislation. Establish practices, procedures and methodologies ensuring data protection of all components, for instance: • Draft of data-sharing agreements, Evaluation of a sub-contractor. Drafting or reviewing DTA/DSA type agreements or contracts. Conduct and draft a Data Protection Impact Assessment (DPIA) on a data processing or simple project, involving few players or few technical solutions. Ensure contractual monitoring of partners and donors on the data protection-related dimension.	Make a diagnosis and implement an action plan to ensure compliance with national and international legislation. Analyse whether a processing is compliant and highlight non-conformities. Develop a data protection strategy for a mission or organisation. Design and disseminate practices, procedures and methodologies allowing the implementation of key data protection principles.
	Conduct and draft a Data Protection Impact Assessment (DPIA) on a complex data processing at mission or organisational level, involving a great deal of solutions and players.	N/A

In which situation is skill S5.1 applied?	
In general, skill S5.1 is used	From the moment data on vulnerable populations is collected…
And more specifically for level A 	…and when it is only necessary to identify whether said data is sensitive or personal in order to apply the appropriate measures. Or when clear guidelines for specific organisational collections exist and all one has to do is apply them. A dedicated data protection relay exists at the local level to support this level.
And more specifically for level B 	…and where general guidelines exist within the organisation and need to be adapted to specific collection activities. …and/or when a dedicated data protection relay exists at the international level.

And more specifically for level C 	…and when a diagnosis of compliance with current legislation needs to be conducted. …and/or when the organisation's guidelines are to be drafted or updated.
And more specifically for level D 	…and when it is necessary to conduct an impact analysis on data protection in a complex environment.

S5.2: BE FAMILIAR WITH AND APPLY THE ETHICAL PRINCIPLES OF RESPONSIBLE DATA MANAGEMENT TAKING INTO ACCOUNT INDUSTRY BEST PRACTICES AND CONTEXTUAL SPECIFICITIES

Skill 5.2

Level of proficiency	Technical know-how	Methodological know-how
	Adopt the data protection standards applied to humanitarian aid and international development (Signal type Code of Ethics, Principles for Digital Development, etc.) and context (non-state armed groups, medical data, etc.). Implement donor guidelines for data protection.	Identify the key ethical issues of a data processing or project and alert if there is any doubt or identification of a risk (for instance, block a data transfer in the absence of a risk analysis). Ensure ownership by program teams of ethical issues (awareness raising techniques and training).
	N/A	Identify the issues at stake in the debate related to the application of data protection concepts and laws in the field of humanitarian aid and international development: • Concept of responsible management vs. protection, • Application of informed consent, inadequacy of the GDPR for the intervention context. Conduct an in-depth assessment of the ethical issues of a data processing or project (be able to argue independently to refuse data transfer to a partner, assess the level of risk of data collection, etc.). Make a diagnosis and implement an action plan to comply with national and international legislation.

In which situation is skill S5.2 applied?	
In general, skill S5.2 is used	From the moment data on vulnerable populations (personal and sensitive) is collected…

And more specifically for level B 	…and when it is necessary to adapt specific collection activities to the general guidelines that exist within the organisation (for compliance with standards defined by donors and the sector).
And more specifically for level C 	…and when it is necessary to conduct a diagnosis of compliance with donor guidelines and industry standards. …and the organisation's guidelines are to be drafted or updated.

S5.3: DEFINE AND IMPLEMENT DATA SECURITY BEST PRACTICES

Skill 5.3

Level of proficiency	Technical know-how	Methodological know-how
	Pre-identify the types of data that need to be protected (sensitive, personal, community data). Have simple reflexes for securing paper based and digital data: locked cupboard, choice of a secured password, encrypting a file, sharing data internally and externally, etc. Be familiar with the best practices for securing the various tools used.	N/A
	Implement project-wide securing of paper based and digital data (shared cloud encryption, password sharing modality, choice of authentication method, user access management, traceability measures, password strength assessment, back-up modality, anonymisation and pseudonymisation method, etc.). Be familiar with the entire range of data security components (including methods for securing the various tools used).	Adapt the organisation's guidelines to specific contexts and develop standard practice guides. Disseminate and know how to ensure implementation of procedures.
	Perform "basic" data security audits. Gain a thorough understanding of the various components of technical and organisational data security and the degrees associated with each: • Difference between encryption during transfer vs. during storage, • Server certification, PGP key concept or AES standard, etc.	Design and align data security practices across the organisation. Assess the level of data security implemented in a project or organisation or with a partner (assess practices, assess relevance and appropriateness of the chosen measures). Be able to communicate easily with IT teams with regards to cybersecurity.

	Be thoroughly familiar with the organisation's IT environment and the appropriate cybersecurity measures associated with it. Apply advanced data security measures in a complex environment (players, tools, and multiple location). Perform complete data security audits.	N/A

In which situation is skill S5.3 applied?	
In general, skill S5.3 is used	From the moment the organisation uses computer and digital tools for data collection, management and storage…
And more specifically for level A	…and when it is necessary to perform data security manipulations on said tools.
And more specifically for level B	…and when it is necessary to coordinate data security practices, to ensure their implementation across a mission.
And more specifically for level C	…and when it is necessary to establish strategic directions in terms of data security, to verify their proper application and to ensure coordination with the associated services.
And more specifically for level D	…and when it is necessary to establish a complex system (multiple actors, locations, and IT and digital tools) to secure data.

8.4. WHAT TO KEEP IN MIND WHEN RECRUITING

Training

Dedicated data protection training: dual courses in information technology (so as to easily interact with IT staff) and law/legal.

Experience

Data Protection, implementation of an GDPR compliance framework.

Mastery of key concepts and tools

Basic	Intermediate	Advanced
• Sensitive data • Personal data • Community data • Passwords / Access Management • Do No Harm • Consent • Responsible Data Management vs. Data Protection	• General GDPR concepts (legal basis for the application of data protection) • Encryption (in transit and during storage) • Practice of de-identification, anonymisation, pseudonymisation, aggregation, management of data retention periods • Default data protection from design ("by design and by default")	• Detailed knowledge of the GDPR • Detailed knowledge of the donor rules • Data sharing agreement • DPIA • Cybersecurity • Server certification (PGP key concept or AES standard…)

Attitudes

- Being proactive, identifying deficiencies
- Able to challenge collection needs
- Spearhead proposals (solutions)
- Independence, confidentiality, discretion
- Communication and pedagogy
- Objectivity, impartiality